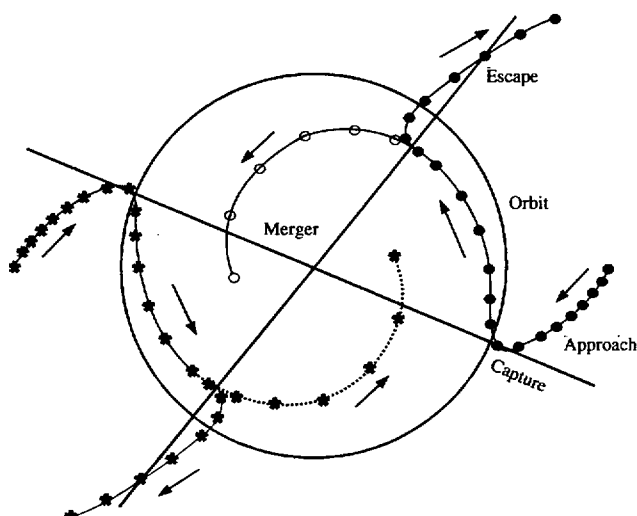


## APPENDIX A DEFINITIONS

**BEST TRACK** - A subjectively smoothed path, versus a precise and very erratic fix-to-fix path, used to represent tropical cyclone movement, and based on an assessment of all available data.

**BINARY INTERACTION** - Binary interaction is a mutual cyclonic orbit of two tropical cyclones around their centroid. Lander and Holland (1993) showed that the behavior of most binary tropical cyclones consists of an approach, sudden capture, then a period of steady cyclonic orbit followed by a sudden escape or (less frequently) a merger (see Figure A-1).



**Figure A-1** Model of binary interaction of two tropical cyclones that contain the major elements of approach and capture, followed by mutual orbit, then escape, or merger.

**CENTER** - The vertical axis or core of a tropical cyclone. Usually determined by cloud vorticity patterns, wind and/or pressure distribution.

**EPHEMERIS** - Position of a body (satellite) in space as a function of time; used for gridding satellite imagery. Since ephemeris gridding is based solely on the predicted position of the

satellite, it is susceptible to errors from vehicle wobble, orbital eccentricity, the oblateness of the Earth, and variation in vehicle speed.

**EXPLOSIVE DEEPENING** - A decrease in the minimum sea-level pressure of a tropical cyclone of 2.5 mb/hr for at least 12 hours or 5 mb/hr for at least six hours (Dunnavan, 1981).

**EXTRATROPICAL** - A term used in warnings and tropical summaries to indicate that a cyclone has lost its "tropical" characteristics. The term implies both poleward displacement from the tropics and the conversion of the cyclone's primary energy source from the release of latent heat of condensation to baroclinic processes. It is important to note that cyclones can become extratropical and still maintain winds of typhoon or storm force.

**EYE** - The central area of a tropical cyclone when it is more than half surrounded by wall cloud.

**INTENSITY** - The maximum sustained 1-minute mean surface wind speed, typically within one degree of the center of a tropical cyclone.

**MAXIMUM SUSTAINED WIND** - The highest surface wind speed averaged over a 1-minute period of time. (Peak gusts over water average 20 to 25 percent higher than sustained winds).

**MEI-YU FRONT** - The Term "mei-yu" is the Chinese expression for "plum rains". The mei-yu front is a persistent east-west zone of disturbed weather during spring which is quasi-stationary and stretches from the east China coast, across Taiwan, and eastward into the Pacific south of Japan.

**MONSOON DEPRESSION** - A tropical cyclonic vortex characterized by: 1) its large size, the outer-most closed isobar may have a diameter on the order of 600 nm (1000 km); 2) a loosely organized cluster of deep convective elements; 3) a low-level wind distribution which features a 100-nm (200-km) diameter light-wind core which may be partially surrounded by a band of gales; and, 4) a lack of a distinct cloud system center. Note: most monsoon depressions which form in the western North Pacific eventually acquire persistent central convection and accelerated core winds marking its transition into a conventional tropical cyclone.

**MONSOON GYRE** - A mode of the summer monsoon circulation of the western North Pacific characterized by: 1) a very large nearly circular low-level cyclonic vortex that has an outer-most closed isobar with diameter on the order of 1200 nm (2500 km); 2) a cloud band rimming the southern through eastern periphery of the vortex/surface low; 3) a relatively long (two week) life span - initially, a subsident regime exists in its core and western and north-western quadrants with light winds and scattered low cumulus clouds; later, the area within the outer closed isobar may fill with deep convective cloud and become a monsoon depression or tropical cyclone; and, 4) the large vortex cannot be the result of the expanding wind field of a preexisting monsoon depression or tropical cyclone. Note: a series of small or very small tropical cyclones may emerge from the "head" or leading edge of the peripheral cloud band of a monsoon gyre (JTCW, 1993; Lander, 1994a).

**RAPID DEEPENING** - A decrease in the minimum sea-level pressure of a tropical cyclone of 1.75 mb/hr or 42 mb for 24-hours (Holliday and Thompson, 1979).

**RECURVATURE** - The turning of a tropical cyclone from an initial path toward the west and poleward to east and poleward, after moving

poleward of the mid-tropospheric subtropical ridge axis.

**REVERSE-ORIENTED MONSOON TROUGH** - The distinguishing characteristics of a reverse-oriented monsoon trough are a SW-NE (i.e., reverse) orientation of the trough axis with respect to the normal NW-SE orientation of the trough axis, and the penetration of the trough axis into subtropical areas normally the province of easterly flow.

**SIGNIFICANT TROPICAL CYCLONE** - A tropical cyclone becomes "significant" with the issuance of the first numbered warning by the responsible warning agency.

**SIZE** - The areal extent of a tropical cyclone, usually measured radially outward from the center to the outer-most closed isobar. Based on an average radius of the outer-most closed isobar, size categories in degrees of latitude follow: < 2° = very small, 2° to 3° = small, 3° to 6° = medium (average), 6° to 8° = large, and 8° or greater = very large (Brand, 1972 and a modification of Merrill, 1982).

**STRENGTH** - The average wind speed of the surrounding low-level wind flow, usually measured within one to three degrees of the center of a tropical cyclone (Weatherford and Gray, 1985).

**SUBTROPICAL CYCLONE** - A low pressure system that forms over the ocean in the subtropics and has some characteristics of a tropical circulation, but not a central dense overcast. Although of upper cold low or low-level baroclinic origins, the system can transition to a tropical cyclone.

**SUPER TYPHOON** - A typhoon with maximum sustained 1-minute mean surface winds of 130 kt (67 m/sec) or greater.

**TROPICAL CYCLONE** - A non-frontal, migratory low-pressure system, usually of synoptic scale, originating over tropical or subtropical waters and having a definite organized circulation.

**TROPICAL DEPRESSION** - A tropical cyclone with maximum sustained 1-minute mean surface winds of 33 kt (17 m/sec) or less.

**TROPICAL DISTURBANCE** - A discrete system of apparently organized convection, generally 100 to 300 nm (185 to 555 km) in diameter, originating in the tropics or subtropics, having a non-frontal, migratory character and having maintained its identity for 12- to 24-hours. The system may or may not be associated with a detectable perturbation of the low-level wind or pressure field. It is the basic generic designation which, in successive stages of development, may be classified as a tropical depression, tropical storm, typhoon or super typhoon.

**TROPICAL STORM** - A tropical cyclone with maximum 1-minute mean sustained surface winds in the range of 34 to 63 kt (18 to 32 m/sec), inclusive.

**TROPICAL UPPER-TROPOSPHERIC TROUGH (TUTT)** - A dominant climatological system and a daily upper-level synoptic feature of the summer season, over the tropical North Atlantic, North Pacific and South Pacific Oceans (Sadler, 1979). Cold core lows in the TUTT are referred to as cells, or TUTT cells.

**TYPHOON (HURRICANE)** - A tropical cyclone with maximum sustained 1-minute mean surface winds of 64 to 129 kt (33 to 66 m/sec). West of 180° E longitude they are called typhoons and east of 180° E longitude hurricanes.

**WALL CLOUD** - An organized band of deep cumuliform clouds that immediately surrounds the central area of a tropical cyclone. The wall cloud may entirely enclose or partially surround the center.

**WESTERLY WIND BURST** - A short-duration low-level westerly wind event along and near the equator in the western Pacific Ocean (and sometimes in the Indian Ocean) (Luther et al. 1983). Typically, a westerly wind burst (WWB) lasts several days and has westerly winds of at least 10 kt (5 m/sec) (Keen 1988). Most WWBs occur during the monsoon transition months of April-May, and November-December. They show some relationship to the ENSO phenomenon (Luther et al. 1983; Ramage 1986). Some WWBs are even more energetic, with wind speeds of 30 kt (15 m/sec) observed during well-developed systems. These intense WWBs are associated with a large cluster of deep-convective cloud along the equator. An intense WWB is a necessary precursor to the formation of tropical cyclone twins symmetrical with respect to the equator (Keen 1982; Lander 1990).

## APPENDIX B

### NAMES FOR TROPICAL CYCLONES IN THE WESTERN NORTH PACIFIC OCEAN AND SOUTH CHINA SEA

Column 1		Column 2		Column 3		Column 4	
<b>ANN</b>	<i>AN</i>	<b>ABEL</b>	<i>A-bel</i>	<b>AMBER</b>	<i>AM-ber</i>	<b>ALEX</b>	<i>AL-x</i>
<b>BART</b>	<i>BART</i>	<b>BETH</b>	<i>BETH</i>	<b>BING</b>	<i>BING</i>	<b>BABS</b>	<i>BABS</i>
<b>CAM</b>	<i>KAM</i>	<b>CARLO</b>	<i>KAR-lo</i>	<b>CASS</b>	<i>KASS</i>	<b>CHIP</b>	<i>CHIP</i>
<b>DAN</b>	<i>DAN</i>	<b>DALE</b>	<i>DAY-l</i>	<b>DAVID</b>	<i>DAY-vid</i>	<b>DAWN</b>	<i>DAWN</i>
<b>EVE</b>	<i>EEV</i>	<b>ERNIE</b>	<i>ER-nee</i>	<b>ELLA</b>	<i>EL-la</i>	<b>ELVIS</b>	<i>EL-vis</i>
<b>FRANKIE</b>	<i>FRANK-ee</i>	<b>FERN</b>	<i>FERN</i>	<b>FRITZ</b>	<i>FRITZ</i>	<b>FAITH</b>	<i>FAITH</i>
<b>GLORIA</b>	<i>GLOR-ee-uh</i>	<b>GREG</b>	<i>GREG</i>	<b>GINGER</b>	<i>JIN-jer</i>	<b>GIL</b>	<i>GIL</i>
<b>HERB</b>	<i>HERB</i>	<b>HANNAH</b>	<i>HAN-nah</i>	<b>HANK</b>	<i>HANGK</i>	<b>HILDA</b>	<i>HIL-dah</i>
<b>IAN</b>	<i>EE-an</i>	<b>ISA</b>	<i>EE-sah</i>	<b>IVAN</b>	<i>I-van</i>	<b>IRIS</b>	<i>I-ris</i>
<b>JOY</b>	<i>JOY</i>	<b>JIMMY</b>	<i>JIM-ee</i>	<b>JOAN</b>	<i>JONE</i>	<b>JACOB</b>	<i>JAY-kob</i>
<b>KIRK</b>	<i>KIRK</i>	<b>KELLY</b>	<i>KEL-lee</i>	<b>KEITH</b>	<i>KEETH</i>	<b>KATE</b>	<i>KATE</i>
<b>LISA</b>	<i>LEE-sah</i>	<b>LEVI</b>	<i>LEEV-eye</i>	<b>LINDA</b>	<i>LIN-dah</i>	<b>LEO</b>	<i>LEE-o</i>
<b>MARTY</b>	<i>MAR-tee</i>	<b>MARIE</b>	<i>mah-REE</i>	<b>MORT</b>	<i>MORT</i>	<b>MAGGIE</b>	<i>MAG-gee</i>
<b>NIKI</b>	<i>NI-kee</i>	<b>NESTOR</b>	<i>NES-tor</i>	<b>NICHOLE</b>	<i>nik-KOL</i>	<b>NEIL</b>	<i>NEEL</i>
<b>ORSON</b>	<i>OR-son</i>	<b>OPAL</b>	<i>O-pel</i>	<b>OTTO</b>	<i>OT-tow</i>	<b>OLGA</b>	<i>OL-gah</i>
<b>PIPER</b>	<i>PI-per</i>	<b>PETER</b>	<i>PEE-ter</i>	<b>PENNY</b>	<i>PEN-nee</i>	<b>PAUL</b>	<i>PAUL</i>
<b>RICK</b>	<i>RICK</i>	<b>ROSIE</b>	<i>RO-zee</i>	<b>REX</b>	<i>REX</i>	<b>RACHEL</b>	<i>RAY-chel</i>
<b>SALLY</b>	<i>SAL-lee</i>	<b>SCOTT</b>	<i>SKOT</i>	<b>STELLA</b>	<i>STEL-lah</i>	<b>SAM</b>	<i>SAM</i>
<b>TOM</b>	<i>TOM</i>	<b>TINA</b>	<i>TEE-nah</i>	<b>TODD</b>	<i>TOD</i>	<b>TANYA</b>	<i>TAHN-yah</i>
<b>VIOLET</b>	<i>VI-uh-let</i>	<b>VICTOR</b>	<i>vik-TOR</i>	<b>VICKI</b>	<i>VIK-kee</i>	<b>VIRGIL</b>	<i>VER-jil</i>
<b>WILLIE</b>	<i>WIL-lee</i>	<b>WINNIE</b>	<i>WIN-nee</i>	<b>WALDO</b>	<i>WAL-do</i>	<b>WENDY</b>	<i>WEN-dee</i>
<b>YATES</b>	<i>YATES</i>	<b>YULE</b>	<i>YOU-le</i>	<b>YANNI</b>	<i>YAN-ni</i>	<b>YORK</b>	<i>YORK</i>
<b>ZANE</b>	<i>ZANE</i>	<b>ZITA</b>	<i>ZEE-tah</i>	<b>ZEB</b>	<i>ZEB</i>	<b>ZIA</b>	<i>ZEE-uh</i>

**NOTE 1:** Assign names in rotation, alphabetically, starting with (ANN) for first tropical cyclone of 1996. When the last name in Column 4 (ZIA) has been used, the sequence will begin again with the first name in Column 1 (ANN).

**NOTE 2:** Pronunciation guide for names is italicized.

**SOURCE:** CINCPACINST 3140.1W

## APPENDIX C CONTRACTIONS

<b>AB</b>	Air Base	<b>ATCF</b>	Automated Tropical Cyclone Forecast (system)	<b>CPA</b>	Closest Point of Approach
<b>ABW</b>	Air Base Wing			<b>CPHC</b>	Central Pacific Hurricane Center
<b>ABIO</b>	Significant Tropical Weather Advisory for the Indian Ocean	<b>ATCR</b>	Annual Tropical Cyclone Report	<b>CSC</b>	Cloud System Center
<b>ABPW</b>	Significant Tropical Weather Advisory for the Western Pacific Ocean	<b>AUTODIN</b>	Automated Digital Network	<b>CSUM</b>	Colorado State University Model
		<b>AWDS</b>	Automated Weather Distribution System	<b>DAVE</b>	Name of a Hybrid Aid
<b>ACCS</b>	Air Control Center Squadron	<b>AWN</b>	Automated Weather Network	<b>DD</b>	Digital Dvorak
				<b>DDN</b>	Defense Data Network
<b>ACFT</b>	Aircraft	<b>BLND</b>	Blended (Hybrid Aid)	<b>DEG</b>	Degree(s)
<b>ADP</b>	Automated Data Processing	<b>CDO</b>	Central Dense Overcast	<b>DFS</b>	Digital Facsimile System
		<b>CI</b>	Current Intensity		
<b>AFB</b>	Air Force Base	<b>CIMSS</b>	Cooperative Institute for Meteorological Satellite Studies	<b>DISN</b>	Defense Information Systems Network
<b>AFDIS</b>	Air Force Dial-In System			<b>DMS</b>	Defense Messaging System
<b>AFGWC</b>	Air Force Global Weather Central	<b>CIV</b>	Civilian	<b>DMSP</b>	Defense Meteorological Satellite Program
		<b>CLD</b>	Cloud		
<b>AIREP</b>	Aircraft (Weather) Report	<b>CLIM</b>	Climatology	<b>DOD</b>	Department of Defense
<b>AJTWC</b>	Alternate Joint Typhoon Warning Center	<b>CLIP or CLIPER</b>	Climatology and Persistence Technique	<b>DSN</b>	Defense Switched Network
<b>AMOS</b>	Automatic Meteorological Observing Station	<b>CM</b>	Centimeter(s)	<b>DTG</b>	Date Time Group
		<b>C-MAN</b>	Coastal-Marine Automated Network	<b>EGRR</b>	Bracknell Model
<b>AOR</b>	Area of Responsibility	<b>CMOD</b>	Compact Meteorological and Oceanographic Drifter	<b>ENSO</b>	El Niño-Southern Oscillation
<b>ARC</b>	Automated Remote Collection (system)			<b>ERS</b>	European Space Agency (ESA) Remote Sensing Satellite
		<b>COMNAVMETOCCOM or CNMOC</b>	Commander Naval Meteorology and Oceanography Comm- and	<b>FBAM</b>	FNOC Beta and Advection Model
<b>ARGOS</b>	(International Service for Drifting Buoys)			<b>FI</b>	Forecast Intensity (Dvorak)
<b>ARQ</b>	Automatic Response to Query				

<b>FLENUMETOCEN</b>	Fleet Numerical Meteorology and Oceanography Center	<b>JTWC92 or JT92</b>	Statistical-Dynamical Objective Technique	<b>MSLP</b>	Minimum Sea-level Pressure
		<b>JTYM</b>	Japanese Typhoon Model	<b>NARDAC</b>	Naval Regional Data Automation Center
<b>FT</b>	Foot/Feet	<b>KM</b>	Kilometer(s)	<b>NAS</b>	Naval Air Station
<b>FTP</b>	File Transfer Protocol	<b>KT</b>	Knot(s)	<b>NASA</b>	National Aeronautics and Space Administration
<b>GCA</b>	Great Circle Arc	<b>LAN</b>	Local Area Network		
<b>GMS</b>	Geostationary Meteorological Satellite	<b>LAT</b>	Latitude		
<b>GMT</b>	Greenwich Mean Time	<b>LLCC</b>	Low-Level Circulation Center	<b>NAVPACMETOCEN</b>	Naval Pacific Meteorology and Oceanography Center (Hawaii)
<b>GOES</b>	Geostationary Operational Environmental Satellite	<b>LONG</b>	Longitude		
		<b>LUT</b>	Local User Terminal	<b>NAVPACMETOCEN WEST</b>	Naval Pacific Meteorology and Oceanography Center (Guam)
<b>GSRS</b>	Geostationary Satellite Receiving System	<b>LVL</b>	Level		
<b>GTS</b>	Global Telecommunications System	<b>M</b>	Meter(s)	<b>NCEP</b>	National Centers for Environmental Prediction
<b>hPa</b>	Hectopascal	<b>MAX</b>	Maximum		
<b>HPAC</b>	Mean of XTRP and CLIM Techniques (Half Persistence and Climatology)	<b>MB</b>	Millibar(s)	<b>NEDN</b>	Naval Environmental Data Network
		<b>MBAM</b>	Medium Beta and Advection Model		
		<b>MCAS</b>	Marine Corps Air Station	<b>NESDIS</b>	National Environmental Satellite, Data, and information Service
<b>HF</b>	High Frequency	<b>MCS</b>	Mesoscale Convective System	<b>NESN</b>	Naval Environmental Satellite Network
<b>HR</b>	Hour(s)	<b>MET</b>	Meteorological		
<b>HRPT</b>	High Resolution Picture Transmission	<b>MIDDAS</b>	Meteorological Imagery, Data Display, and Analysis System	<b>NEXRAD</b>	Next Generation (Doppler Weather) Radar
<b>ICAO</b>	International Civil Aviation Organization	<b>MIN</b>	Minimum	<b>NHC</b>	National Hurricane Center
<b>INIT</b>	Initial	<b>MINI-MET</b>	Mini-Meteorological	<b>NIPRNET</b>	Non-secure Internet Protocol Router Network
<b>INST</b>	Instruction	<b>MISTIC</b>	Mission Sensor Tactical Imaging Computer		
<b>IP</b>	Internet Protocol	<b>MM</b>	Millimeter(s)	<b>NM</b>	Nautical Mile(s)
<b>IR</b>	Infrared	<b>MOVG</b>	Moving	<b>NMC</b>	National Meteorological Center
<b>JTWC</b>	Joint Typhoon Warning Center				

<b>NOAA</b>	National Oceanic and Atmospheric Administration	<b>OLS</b>	Operational Linescan System	<b>SIPRNET</b>	Secret Internet Protocol Router Network
<b>NODDES</b>	Naval Environmental Data Network Oceanographic Data Distribution and Expansion System	<b>ONR</b>	Office of Naval Research	<b>SLP</b>	Sea-Level Pressure
<b>NOGAPS or NGPS</b>	Navy Operational Global Atmospheric Prediction System	<b>OSS</b>	Operations Support Squadron	<b>SPAWRSYSCOM</b>	Space and Naval Warfare Systems Command
		<b>OSB</b>	Ocean Sciences Branch	<b>SSM/I</b>	Special Sensor Microwave/Imager
		<b>OTCM</b>	One-Way (Interactive) Tropical Cyclone Model	<b>SST</b>	Sea Surface Temperature
		<b>PACAF</b>	Pacific Air Force		
<b>NODDS</b>	Naval Oceanography Data Distribution Systems	<b>PACMEDS</b>	Pacific Meteorological Data System	<b>ST</b>	Subtropical
		<b>PACOM</b>	Pacific Command	<b>STNRY</b>	Stationary
<b>NPS</b>	Naval Postgraduate School	<b>PAGASA</b>	Philippine Atmospheric, Geophysical Astronomical Services Administration	<b>STR</b>	Subtropical Ridge
<b>NR</b>	Number			<b>STRT</b>	Straight (Forecast Aid)
<b>NRL</b>	Naval Research Laboratory			<b>STY</b>	Super Typhoon
		<b>PC</b>	Personal Computer	<b>TAPT</b>	Typhoon Acceleration Prediction Technique
<b>NRL-MRY</b>	Naval Research Laboratory at Monterey, CA	<b>PCN</b>	Position Code Number	<b>TC</b>	Tropical Cyclone
		<b>PDN</b>	Public Data Network	<b>TCFA</b>	Tropical Cyclone Formation Alert
<b>NRPS or NORAPS</b>	Navy Operational Regional Atmospheric Prediction System	<b>PIREP</b>	Pilot Weather Report(s)	<b>TD</b>	Tropical Depression
		<b>RADOB</b>	Radar Observation	<b>TDA</b>	Typhoon Duty Assistant
<b>NSCAT</b>	NASA Scatterometer	<b>RECON</b>	Reconnaissance	<b>TDO</b>	Typhoon Duty Officer
<b>NSDS-G</b>	Naval Satellite Display System - Geostationary	<b>RECR</b>	Recurve (Forecast Aid)	<b>TELEFAX</b>	Telephone Facsimile
		<b>RMSE</b>	Root mean Square Error	<b>TESS</b>	Tactical Environmental Support System
<b>NTWP</b>	Naval Telecommunications Area Master Station, Western Pacific	<b>ROCI</b>	Radius of outer-most closed isobar	<b>TIFF</b>	Tagged Image File Format
		<b>SAT</b>	Satellite		
<b>SIPRNET</b>	Secret Internet Protocol Router Network	<b>SEC</b>	Second(s)	<b>TIROS-N</b>	Television Infrared Observational Satellite-Next Generation
<b>NWP</b>	Northwest Pacific	<b>SDHS</b>	Satellite Data Handling System		
<b>NWS</b>	National Weather Service	<b>SFC</b>	Surface	<b>TOGA</b>	Tropical Ocean Global Atmosphere
<b>OBS</b>	Observations	<b>SGDB</b>	Satellite Global Data Base	<b>TOVS</b>	TIROS Operational Vertical Sounder

<b>TS</b>	Tropical Storm	<b>USN</b>	United States Navy	<b>WSR-88D</b>	Weather surveillance Radar - 1988 Doppler
<b>TUTT</b>	Tropical Upper-Tropospheric Trough	<b>VIS</b>	Visual	<b>WVTW</b>	Water Vapor Tracked Winds
<b>TY</b>	Typhoon	<b>WAN</b>	Wide Area Network	<b>WWW</b>	World Wide Web
<b>TYAN</b>	Typhoon Analog (Forecast Aid)	<b>WESTPAC</b>	Western (North) Pacific	<b>XTRP</b>	Extrapolation
<b>ULCC</b>	Upper-Level Circulation Center	<b>WGTD</b>	Weighted (Hybrid Aid)	<b>Z</b>	Zulu time (Greenwich Mean Time/Universal Coordinated Time)
<b>US</b>	United States	<b>WMO</b>	World Meteorological Organization		
<b>USAF</b>	United States Air Force	<b>WNP</b>	Western North Pacific		
<b>USCINCPAC</b>	Commander-in-Chief Pacific (AF - Air Force, FLT - Fleet)	<b>WRN or WRNG</b>	Warning(s)		
		<b>WSD</b>	Wind Speed and Direction		



## APPENDIX D

### PAST ANNUAL TROPICAL CYCLONE REPORTS

Copies of the past Annual Tropical Cyclone Reports for DOD agencies or contractors can be obtained through:

Defense Technical Information Center  
ATTN:FDAC  
Cameron Station  
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Phone: (703)-767-8274

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<u>Year</u>	<u>Acquisition Number</u>	<u>Year</u>	<u>Acquisition Number</u>	<u>Year</u>	<u>Acquisition Number</u>
1959	AD 786147	1971	AD 768333	1983	AD A137836
1960	AD 786148	1972	AD 768334	1984	AD A153395
1961	AD 786149	1973	AD 777093	1985	AD A168284
1962	AD 786128	1974	AD 010271	1986	AD A184082
1963	AD 786208	1975	AD A023601	1987	AD A191883
1964	AD 786209	1976	AD A038484	1988	AD A207206
1965	AD 786210	1977	AD A055512	1989	AD A232469
1966	AD 785891	1978	AD A070904	1990	AD A239910
1967	AD 785344	1979	AD A082071	1991	AD A251952
1968	AD 785251	1980	AD A094668	1992	AD A274464
1969	AD 785178	1981	AD A112002	1993	AD A285097
1970	AD 785252	1982	AD A124860	1994	AD A301618

## APPENDIX E

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CATHOLIC UNIVERSITY OF AMERICA  
CAF WEATHER CENTRAL, TAIWAN  
CENTRAL MET OBSERVATORY, BEIJING  
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<p>ANNUAL PUBLICATION SUMMARIZING TROPICAL CYCLONE ACTIVITY IN THE WESTERN NORTH PACIFIC, BAY OF BENGAL, ARABIAN SEA, WESTERN SOUTH PACIFIC AND SOUTH INDIAN OCEANS. A BEST TRACK IS PROVIDED FOR EACH SIGNIFICANT TROPICAL CYCLONE. A BRIEF NARRATIVE IS GIVEN FOR ALL TROPICAL CYCLONES IN THE WESTERN NORTH PACIFIC AND NORTH INDIAN OCEANS. ALL FIX DATA USED TO CONSTRUCT THE BEST TRACKS ARE PROVIDED UPON REQUEST ON DISKETTES. FORECAST VERIFICATION DATA AND STATISTICS FOR THE JOINT TYPHOON WARNING CENTER (JTWC) ARE SUBMITTED.</p>					
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